

WEST Search History

DATE: Wednesday, February 22, 2006

Hide?	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
		<i>DB=PGPB,USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L12	l11 with (belt guide)	4
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<input type="checkbox"/>	L7	L5 with basin	0
<input type="checkbox"/>	L6	L5 with drain	0
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<input type="checkbox"/>	L4	(conveyor belt) with cleaning	1105
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END OF SEARCH HISTORY

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Search Results - Record(s) 11 through 13 of 13 returned.

☐ 11. Document ID: US 4918778 A

L2: Entry 11 of 13

File: USPT

Apr 24, 1990

US-PAT-NO: 4918778

DOCUMENT-IDENTIFIER: US 4918778 A

TITLE: Endless rotary band cleaning device, particularly for cleaning a conveyor belt or supporting surfaces of objects

DATE-ISSUED: April 24, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Chupin; Guillaume	Versailles			FR
Dandeville; Denis	Mantes la Ville			FR

US-CL-CURRENT: 15/97.1; 15/102, 15/3.1, 15/3.21, 15/36, 198/494

ABSTRACT:

The invention provides an endless rotary band cleaning device comprising an endless cleaning band mounted on three rollers disposed parallel to each other, namely: a drive roller, a guide roller and a secondary roller disposed in the space between the other two rollers. These rollers are arranged so that the lower part of the band follows a sinuous path comprising an upgoing path in which the band is washed and a downgoing path after which the band is impregnated with cleaning liquid. The upper part of the band situated between the drive roller and the guide roller serves as cleaning area.

14 Claims, 2 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw. Des
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☐ 12. Document ID: US 4226325 A

L2: Entry 12 of 13

File: USPT

Oct 7, 1980

US-PAT-NO: 4226325

DOCUMENT-IDENTIFIER: US 4226325 A

TITLE: Conveyor lubricating and washing apparatus

DATE-ISSUED: October 7, 1980

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vandas; Edward B.	St. Louis	MO		

US-CL-CURRENT: 198/493; 118/70, 134/58R, 134/95.3, 134/99.2

ABSTRACT:

Apparatus for continuously lubricating a conveyor belt with a mixture of water and soap or detergent during normal operation and for washing the conveyor belt during a preselected time interval after normal operation has ceased. Solenoid valves are interposed in water lines to a lubricating nozzle and wash nozzles to control the flow of water to the nozzles, and pumps are provided to inject soap or detergent into each of the water lines. During normal conveyor operation, electrical power is supplied only to the lubricating line solenoid valve and the lubricating line pump to produce a lubricating spray of water and soap or detergent from the lubricating nozzle which is directed onto the belt. When the master on-off switch is switched to the "off" position, a wash timer is actuated for a predetermined interval of time and cooperates with a relay to also enable the wash line solenoid valve and the wash line pump to deliver water and soap or detergent to the wash nozzle for cleansing the conveyor belt.

8 Claims, 3 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RMC	Draw De
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☐ 13. Document ID: US 3998321 A

L2: Entry 13 of 13

File: USPT

Dec 21, 1976

US-PAT-NO: 3998321

DOCUMENT-IDENTIFIER: US 3998321 A

TITLE: Conveyor wash device

DATE-ISSUED: December 21, 1976

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schultz; Edward D.	Brandon	FL	33511	

US-CL-CURRENT: 198/495; 134/104.3

ABSTRACT:

A conveyor wash device for use with a conveyor transport system including a conveyor means for transporting particulate material to recover excess particulate

material adhering to the return side of the conveyor means. The conveyor wash device comprises a fluid wash basin configured to retain fluid therein to remove the particulate material from the conveyor means, a plurality of conveyor wash rollers disposed to route the return side of the conveyor means through the fluid wash basin and a particulate recovery means configured to transport particulate material from the fluid wash basin to the feed side of the conveyor transport system.

16 Claims, 4 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw D
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☐ 1. Document ID: US 5030293 A

Using default format because multiple data bases are involved.

L12: Entry 1 of 4

File: USPT

Jul 9, 1991

US-PAT-NO: 5030293
DOCUMENT-IDENTIFIER: US 5030293 A
** See image for Certificate of Correction **

TITLE: Method and apparatus for circuit board cleaning

DATE-ISSUED: July 9, 1991

INVENTOR-INFORMATION:				
NAME	CITY	STATE	ZIP CODE	COUNTRY
Rich; Randall L.	Plano	TX	75074	
Renfrow; Donald F.	Richardson	TX		

US-CL-CURRENT: 134/32; 134/33, 134/34

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	MMOC	Draw. De
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☐ 2. Document ID: US 4585510 A

L12: Entry 2 of 4

File: USPT

Apr 29, 1986

US-PAT-NO: 4585510
DOCUMENT-IDENTIFIER: US 4585510 A

TITLE: Fusing machine

DATE-ISSUED: April 29, 1986

INVENTOR-INFORMATION:				
NAME	CITY	STATE	ZIP CODE	COUNTRY
Hadjiskakis; Constantin	Nutley	NJ		
Monoco; Mario	Fairfield	NJ	07006	

US-CL-CURRENT: 156/555; 38/10, 38/8

ABSTRACT:

An improved fusing machine is disclosed. Improved conveyor apparatus, conveyor belt guide apparatus, conveyor belt cleaning apparatus and oven apparatus are additionally disclosed, one or more of which can be utilized in a fusing machine. The preferred fusing machine is a return-to-operator machine in which feed and discharge conveyors for the oven are superposed, at least the upper conveyor preferably being transparent. The disclosed conveyor apparatus includes direction reversing apparatus, apparatus for adjusting the length of a conveyor and conveyor apparatus in which articles are resiliently engaged between and transported by opposed conveyor belt surfaces. A disclosed oven apparatus comprises resilient heating apparatus.

70 Claims, 30 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 12

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMNC	Drawing
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☐ 3. Document ID: US 4499992 A

L12: Entry 3 of 4

File: USPT

Feb 19, 1985

US-PAT-NO: 4499992

DOCUMENT-IDENTIFIER: US 4499992 A

TITLE: Self-cleaning support roller for an endless conveyor belt

DATE-ISSUED: February 19, 1985

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Paulson; Bernard S.	Clear Lake	WI		
Paulson; Bruce H.	Clayton	WI		
Clark; Brian K.	Clear Lake	WI		
Briesemeister; Richard A.	Clear Lake	WI		

US-CL-CURRENT: 198/498; 198/840

ABSTRACT:

A self-cleaning support for a conveyor belt having a shaft with first and second ends and a longitudinal center capable of being adapted to rotate at each of the ends. The shaft is provided with a first flighting to convey material from a first point proximate the longitudinal center toward the first end and a second flight to convey material from a second point proximate the longitudinal center towards the second end, with the first and second points being spaced apart. Two annular members are mounted at the first and second points respectively both encircling the shaft and defining axial openings permitting material to pass through to their respective flights. These annular members may provide a guide for the underside of the belt by being spaced apart to receive the width of a belt guide.

12 Claims, 3 Drawing figures

Exemplary Claim Number: 11

Number of Drawing Sheets: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw De
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☐ 4. Document ID: US 4008508 A

L12: Entry 4 of 4

File: USPT

Feb 22, 1977

US-PAT-NO: 4008508

DOCUMENT-IDENTIFIER: US 4008508 A

TITLE: Method and apparatus for processing shrimp and the like

DATE-ISSUED: February 22, 1977

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
LaPine; Robert L.	Wells	MI		
Crepeau; Melvin J.	St. Petersburg	FL		

US-CL-CURRENT: 452/3; 452/173

ABSTRACT:

De-headed and unshelled shrimp are automatically processed by apparatus including a feed station, an uncurling station, a cutting station, a flattening or spreader station, a cleaning station and a pair of endless conveyor belts which are supported on guides to form a generally V-shaped trough for receiving the shrimp and continuously moving it from the feed station and through the other stations. The uncurling station includes a plurality of leaf members which resiliently engage the underside of the shrimp as it passes thereunder and cause it to be uncurled to a substantially horizontally extended position prior to entering the cutting station. At the cutting station a rotating cutter blade cuts through the belly of the shrimp to the point at which the alimentary canal is located. The spreader station includes a stationary spreading element having a progressively broadening V-shaped cross section and adapted for spreading portions of the shrimp on the opposite sides of the cut to thereby cause the shrimp to assume a substantially flattened or butterfly position. The flattened shrimp is then moved through a first stage spray assembly where a flow of pressurized cleaning fluid is directed onto the exposed surface of the shrimp to purge or flush away loose debris. Following this initial cleaning, the central, exposed portion of the flattened shrimp is contacted by the outer peripheral surface of the rotating cleaning wheel having a plurality of circumferentially spaced cavities. Finally, the shrimp is moved beneath a second stage spray assembly for final purging or flushing with a pressurized cleaning fluid.

46 Claims, 15 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw De
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☐ 1. Document ID: US 6575291 B2

L2: Entry 1 of 13

File: USPT

Jun 10, 2003

US-PAT-NO: 6575291

DOCUMENT-IDENTIFIER: US 6575291 B2

TITLE: Apparatus and method for the controlled lubrication and cleaning of conveyors

DATE-ISSUED: June 10, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bennett; Scott P.	Stillwater	MN		
Zell; James M.	Northfield	MN		

US-CL-CURRENT: 198/495; 198/500

ABSTRACT:

A method for automatically cleaning and lubricating conveyor belt systems is disclosed. A microprocessor controlled control unit senses the movement of the conveyor belt and the presence of items, for example bottles, on the conveyor. The control unit initiates the application of lubricant, detergent and rinse water onto the conveyor according to the speed of the conveyor, the presence of items and the time passed since the previous application. If the conveyor is stationary, that is, is not in motion, no lubricant or cleaning solution is applied. If the conveyor is moving but no items are on the belt, a reduced amount of lubricant is dispensed onto the conveyor system. The conveyor cleaning and lubricating process may be carried out during normal production operations.

19 Claims, 3 Drawing figures
Exemplary Claim Number: 13
Number of Drawing Sheets: 3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw D
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☐ 2. Document ID: US 6478141 B2

L2: Entry 2 of 13

File: USPT

Nov 12, 2002

US-PAT-NO: 6478141

DOCUMENT-IDENTIFIER: US 6478141 B2

TITLE: Automated conveyor cleaning system

DATE-ISSUED: November 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Virippil; Manoj	Sioux City	IA		
Benson; Shaughn M.	Pierson	IA		
Hubbert; Andrew R.	Denver	CO		
Blei; Keith A.	Oakland	CA		

US-CL-CURRENT: 198/495; 198/842, 198/866

ABSTRACT:

An automated cleaning system for an endless belt conveyor. The cleaning system having a central control which controls pump supplying hot water, soap and a sanitizer to a plurality of controllable spray valves for plural spray bars.

14 Claims, 11 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw D
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☐ 3. Document ID: US 6360874 B1

L2: Entry 3 of 13

File: USPT

Mar 26, 2002

US-PAT-NO: 6360874

DOCUMENT-IDENTIFIER: US 6360874 B1

TITLE: Automated conveyor cleaning system

DATE-ISSUED: March 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Virippil; Manoj	Sioux City	IA		
Benson; Shaughn M.	Pierson	IA		
Hubbert; Andrew R.	Denver	CO		
Blei; Keith A.	Oakland	CA		

US-CL-CURRENT: 198/495; 198/842, 198/866

ABSTRACT:

An automated cleaning system for an endless belt conveyor. The cleaning system having a central control which controls pumps supplying hot water, soap and a

sanitizer to a plurality of controllable spray valves for plural spray bars.

16 Claims, 11 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw Da
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☐ 4. Document ID: US 6357576 B1

L2: Entry 4 of 13

File: USPT

Mar 19, 2002

US-PAT-NO: 6357576

DOCUMENT-IDENTIFIER: US 6357576 B1

**** See image for Certificate of Correction ****

TITLE: Chip conveyors and apparatus for separating and collecting chips

DATE-ISSUED: March 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Enomoto; Yukio	Gifu			JP

US-CL-CURRENT: 198/495; 210/523, 210/531, 409/137, 82/52, 82/901

ABSTRACT:

A chip conveyor includes an endless carrier that circulates in a predetermined direction such that chips discharged by machine tools are collected at a collecting position, are carried to a discharging position, which is spaced from the collecting position by a predetermined distance, and are discharged at the discharging position. The carrier follows an upper path from the collecting position to the discharging position and returns through a lower path from the discharging position to the collecting position. A reservoir tank is provided to correspond to the lower path of the carrier. The carrier passes through the reservoir tank, and chips attached to the carrier are separated from the carrier in a liquid in the reservoir tank.

12 Claims, 10 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw Da
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☐ 5. Document ID: US 6302263 B1

L2: Entry 5 of 13

File: USPT

Oct 16, 2001

US-PAT-NO: 6302263

DOCUMENT-IDENTIFIER: US 6302263 B1

TITLE: Apparatus and method for the controlled lubrication and cleaning of conveyors

DATE-ISSUED: October 16, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bennett; Scott P.	Stillwater	MN		
Zell; James M.	Northfield	MN		

US-CL-CURRENT: 198/495; 198/500

ABSTRACT:

A method for automatically cleaning and lubricating conveyor belt systems is disclosed. A microprocessor controlled control unit senses the movement of the conveyor belt and the presence of items, for example bottles, on the conveyor. The control unit initiates the application of lubricant, detergent and rinse water onto the conveyor according to the speed of the conveyor, the presence of items and the time passed since the previous application. If the conveyor is stationary, that is, is not in motion, no lubricant or cleaning solution is applied. If the conveyor is moving but no items are on the belt, a reduced amount of lubricant is dispensed onto the conveyor system. The conveyor cleaning and lubricating process may be carried out during normal production operations.

9 Claims, 3 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw De
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☐ 6. Document ID: US 6196374 B1

L2: Entry 6 of 13

File: USPT

Mar 6, 2001

US-PAT-NO: 6196374

DOCUMENT-IDENTIFIER: US 6196374 B1

TITLE: Cleaning device for a curved conveyor belt

DATE-ISSUED: March 6, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kilgert; Franz	Bayreuth			DE
Fichtel; Jurgen	Eckersdorf			DE
Widmer; Hans	Mollis			CH

US-CL-CURRENT: 198/495; 198/494, 198/831

ABSTRACT:

A cleaning apparatus (1), to clean a conveyor belt (3) curving in its main plane, comprises a cleaning drum (9) of which the diameter at its end (9i) adjacent to the belt's inner edge (3i) is smaller than its diameter at its end (9a) adjacent to the outer edge (3a).

9 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw De
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☐ 7. Document ID: US 6050391 A

L2: Entry 7 of 13

File: USPT

Apr 18, 2000

US-PAT-NO: 6050391
DOCUMENT-IDENTIFIER: US 6050391 A

TITLE: Self-cleaning conveyor system and method for handling produce

DATE-ISSUED: April 18, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Terry; Mark	Fresno	CA		

US-CL-CURRENT: 198/495; 62/303, 62/380

ABSTRACT:

A conveyor system and method includes spraying equipment for sanitizing upper side and underside surfaces of a conveyor belt for handling produce. Water and chemical composition sprayed on the belt at prescribed pressures, and the temperature control of all applicable components significantly reduce microbe and contaminant concentrations on surfaces that contact the produce for the shelf life of produce that contacted sanitized surfaces of the conveyor system.

2 Claims, 1 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMOC	Draw De
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☐ 8. Document ID: US 5649616 A

L2: Entry 8 of 13

File: USPT

Jul 22, 1997

US-PAT-NO: 5649616
DOCUMENT-IDENTIFIER: US 5649616 A

TITLE: Conveyor chain cleaning apparatus

DATE-ISSUED: July 22, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Stecklow; Richard L.	New Brunswick	NJ	08901	

US-CL-CURRENT: 198/496; 198/495

ABSTRACT:

A plastic conveyor chain cleaning apparatus in which the conveying chain is subjected to a series of cleaning procedures including high pressure solvent spray nozzles, sets of cleaning brushes to subject all surfaces of the conveyor chain to scrubbing action, additional high pressure solvent spray nozzles, a solvent bath and air nozzles for drying the chain. The cleaning brushes include a roller arrangement requiring the conveyor chain to move in a serpentine path to subject surfaces of the conveyor chain to more effective cleaning by cleaning brushes engaged with the conveying surface of the chain while in concave and convex conditions. The apparatus also utilizes additional sets of driven brushes to provide a scrubbing action on all surfaces of the chain and utilizes high pressure solvent spray to blast the surfaces of the chain to remove film and sediment. The brushes are operated by a single motor and are kept clean during use by the solvent. The air nozzles provide a drying action to minimize the amount of solvent left on the chain during the cleaning operation.

18 Claims, 5 Drawing figures

Exemplary Claim Number: 3

Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sentences	Attachments	Claims	KMMC	Draw De
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☐ 9. Document ID: US 5598915 A

L2: Entry 9 of 13

File: USPT

Feb 4, 1997

US-PAT-NO: 5598915

DOCUMENT-IDENTIFIER: US 5598915 A

TITLE: Belt washer

DATE-ISSUED: February 4, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Malmberg; Jonny	Redmond	WA		
Hocker; Jon A.	Kirkland	WA		
Strong; John R.	Kirkland	WA		
Hogan; Donald L.	Bellevue	WA		

US-CL-CURRENT: 198/495

ABSTRACT:

A conveyor belt washer having a plurality of nozzles (12) for ejecting water jets towards an upper side of a foraminous conveyor belt (5). A tank (2) is positioned under the foraminous conveyor belt for receiving water ejected from the nozzles, the tank having a foraminous top side (17) for separating particles accompanying the water, an outlet opening (16) in a lower part (9) thereof and a ventilating opening in an upper part (8) thereof. The conveyor belt washer further having a pump (24) with an inlet and an outlet (29), and pipings (27, 28) connecting the outlet opening of the tank to the inlet of the pump, and the outlet of the pump to the plurality of nozzles, such that the water is recirculated and air entrained by the water through the foraminous top side of the tank escapes through the ventilating opening thereof.

14 Claims, 4 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMNC	Draw De
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☐ 10. Document ID: US 5368650 A

L2: Entry 10 of 13

File: USPT

Nov 29, 1994

US-PAT-NO: 5368650

DOCUMENT-IDENTIFIER: US 5368650 A

TITLE: Method and apparatus for washing conveyer belt in heat treatment apparatus

DATE-ISSUED: November 29, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tanaka; Masaaki	Sano			JP
Sugimoto; Tomio	Sano			JP

US-CL-CURRENT: 134/15; 134/104.1, 134/122R, 198/495, 99/357

ABSTRACT:

A method for washing a conveyer belt in a heat treatment apparatus permits washing of the conveyer belt without causing splashing of a washing fluid so as not to cause danger in operation and contaminate the surroundings and can cause deformation of the conveyer belt upon washing so as to vary the surface configuration and positional relationship of the components for making washing effective. The method comprises the steps of defining a washing fluid bath containing a washing fluid, and placing the washing fluid bath in a portion of a traveling path of the conveyer belt, within which at least one of configuration and positional relationship of components of the conveyer belt varies, for dipping the conveyer belt at the portion within the washing fluid bath. Apparatus for carrying out the method includes a washing bath which can be shifted between a first position away from a vertically deflected portion of the conveyor belt and a second position dipping the vertically deflected portion of the conveyor belt in the washing bath. The washing bath is shifted between the first and second positions by a pivotal lever.

11 Claims, 9 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Drawn Da
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